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VIII

BIRDS AND MAMMALS FROM THE KOOTENAY VALLEY, SOUTHEASTERN BRITISH COLUMBIA

BY

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In the spring of 1928 an opportunity presented itself for carrying on some field work around Creston, Kootenay Valley, southeastern British Columbia, under certain favorable conditions, of which it seemed advisable to take advantage. The party concerned in this work consisted of the writer, Frank Tose, Chief, and Russell Hendricks, student assistant, Department of Exhibits.

Traveling by rail, the party reached Creston on April 30, and the next day established headquarters on some property owned by Mr. Tose, about 1½ miles south of the town on a bench overlooking the Kootenay River bottom, where it remained until May 18. On that date headquarters were moved to the northern edge of town and maintained there until the close of field work, June 5.

Creston is situated on a series of benches on the east side of the Kootenay River about 14 miles southeasterly from Kootenay Landing, which place is at the south end of Lake Kootenay. The altitude of Creston is recorded as 1985 feet,

but the bench mark must be in the lower portion of the town, about 200 feet above the river, which has along this part but a very slight fall. The river bottom here has a width of three to four miles, almost level crosswise, from which rises, at first gradually and then more abruptly, a mountain range on each side; the Purcell Range on the eastern and the Nelson Range on the western side.

Benches of partly open, rolling land extend for some miles above Creston eastward toward the Purcell Mountains, from which flows the Goat River, whose valley widens out at the southern edge of the town on its way to join the Kootenay. On the west side of the latter river rises the gloomy, but less precipitous, Nelson Range, covered with brush and timber. Along the foothills on the east side of the Kootenay are roads and railroads, passing through large timber areas and some open lands, but on the west side, except along the bottom land, there are few roads and fewer trails, the latter made impassable by the melting snow of spring.

On May 2 work began in earnest. Mr. Tose made arrangements with a resident for his labor and the use of a team and wagon with which to visit places in the neighborhood. Tose made a trip across the Kootenay River to West Creston, where collecting was carried on from May 9 to May 14, when warning was received to return at once, as the river was rising to such a height as would soon prevent, for some weeks to come, the bringing back of the outfit. Another trip was made, from May 18 to May 25, to Kitchener and Yahk, at higher elevations than that of Creston, on the western side of the Purcell Range. The two other members of the party meanwhile covered the area within working distance of Creston.

The Kootenay River flows past Creston on its way to the long, narrow Kootenay Lake with so slight a fall as to cause the flood waters to back up, in the spring freshets, for many miles to the southward, past the United States boundary line some distance into northern Idaho. The bottom land here spreads out on each side of the river for a mile or so, much of it being productive of good pasture for stock and hay for winter feeding. The river banks and some higher spots in the bottom

have growths of cottonwoods and willows with small islands of pine here and there, so that there is quite a variety of association, from marsh and open meadow to dense groves of large trees, all available for the support and shelter of various forms of bird life during a large part of the year.

Ordinarily the flood waters commence to encroach upon the bottom lands between the first and the middle of June, according to the reports of residents, with the highest water in July, so it was believed that there would be plenty of time for the party to work over the meadows and cottonwood groves before the overflow would interfere, but in the spring of 1928 late snowfalls, followed by rain and high temperatures, greatly advanced the flood stage. In fact, the water was filling the lowest parts of the river bottom at the time of the arrival of the party, April 30, and in very few days all work there had to be abandoned, while all forms of ground and marsh loving birds were driven away. In consequence, the work of the party was then confined to the higher lands, where bird life was found to be rather scarce, and small rodent life exceedingly so. The necessitated return of Tose from the west side of the river was a distinct disappointment, even though the mountain trails were made impassable by the swollen streams.

Two or three years before the arrival of the Academy party a terrific blizzard had struck the forest, just back of the party's first camp, and had caused so much havoc that sawmills had at once been established in order to save as much of the fallen timber as possible before it rotted.

By the middle of May the Goat River had risen to such a height as seriously to threaten the line of communication and supply of the party, so camp was moved on May 18 to the north side of Creston and established at the foot of Goat Mountain for the rest of the stay.

The list of specimens obtained by the party included 319 birds (of 73 species) and 108 small mammals (of 10 species).

For permission to collect migratory birds, acknowledgments are due to the Dominion Parks Branch, Department of the Interior, and to the Game Conservation Board, Vancouver, B. C., for permission to collect non-migratory birds, in the territory covered by the Academy party in this work.

CHECK-LIST OF THE BIRDS

1. *Mergus americanus* Cassin
2. *Anas platyrhynchos* Linnæus
3. *Querquedula cyanoptera* (Vieillot)
4. *Aix sponsa* (Linnæus)
5. *Botaurus lentiginosus* (Montagu)
6. *Gallinago delicata* (Ord)
7. *Oxyechus vociferus* (Linnæus)
8. *Dendragopus obscurus richardsoni* (Douglas)
9. *Bonasa umbellus umbelloides* (Douglas)
10. *Accipiter relox* (Wilson)
11. *Accipiter cooperi* (Bonaparte)
12. *Cerchneis sparveria sparveria* (Linnæus)
13. *Pandion haliaëtes carolinensis* (Gmelin)
14. *Bubo virginianus* subsp.
15. *Ceryle alcyon caurina* Grinnell
16. *Dryobates villosus monticola* Anthony
17. *Dryobates pubescens leucurus* (Hartlaub)
18. *Picoides arcticus* (Swainson)
19. *Picoides americanus fasciatus* Baird
20. *Sphyrapicus varius nuchalis* Baird
21. *Phloeotomus pileatus picinus* Bangs
22. *Asyndesmus lewisi* Riley
23. *Colaptes cafer collaris* Vigors
24. *Archilochus alexandri* (Bourcier & Mulsant)
25. *Selasphorus rufus* (Gmelin)
26. *Stellula calliope* (Gould)
27. *Tyrannus tyrannus* (Linnæus)
28. *Tyrannus verticalis* Say
29. *Myiochanes richardsoni richardsoni* (Swainson)
30. *Empidonax hammondi* (Xantus)
31. *Empidonax wrighti* Baird
32. *Cyanocitta stelleri annectens* (Baird)
33. *Perisoreus canadensis capitalis* Ridgway
34. *Corvus brachyrhynchos hesperis* Ridgway
35. *Nucifraga columbiana* (Wilson)
36. *Dolichonyx oryzivorus* (Linnæus)
37. *Molothrus ater artemisiæ* Grinnell
38. *Agelaius phoeniceus nevadensis* Grinnell
39. *Sturnella neglecta* Audubon
40. *Icterus bullocki* (Swainson)
41. *Euphagus cyanocephalus cyanocephalus* (Wagler)
42. *Hesperiphona vespertina brooksi* Grinnell
43. *Carpodacus cassini* Baird
44. *Spinus pinus pinus* (Wilson)
45. *Passerculus sandwichensis anthinus* Bonaparte
46. *Zonotrichia leucophrys gambelli* (Nuttall)
47. *Spizella passerina arizonæ* Coues
48. *Junco oreganus shufeldti* (Coale)
49. *Melospiza melodia morphna* Oberholser
50. *Passereila iliaca* subsp.
51. *Pipilo maculatus curtatus* Grinnell
52. *Hedymeles melanocephalus melanocephalus* (Swainson)
53. *Passerina amœna* (Say)
54. *Piranga ludoviciana* (Wilson)
55. *Petrochelidon albifrons albifrons* (Rafinesque)
56. *Hirundo erythrogaster* Boddaert
57. *Iridoprocne bicolor* (Vieillot)
58. *Tachycineta thalassina lepida* Mearns
59. *Stelgidopteryx serripennis* (Audubon)
60. *Bombycilla cedrorum* Vieillot
61. *Vireosylva olivacea* (Linnæus)
62. *Vireosylva gilva swainsoni* (Baird)
63. *Lanivireo solitarius cassini* (Xantus)
64. *Vermivora ruficapilla gutturalis* (Ridgway)
65. *Dendroica æstiva æstiva* (Gmelin)
66. *Dendroica auduboni auduboni* (J. K. Townsend)
67. *Geothlypis trichas occidentalis* Brewster
68. *Setophaga ruticilla* (Linnæus)
69. *Dumetella carolinensis* (Linnæus)
70. *Troglodytes aëdon parkmani* Audubon
71. *Nannus hiemalis pacificus* (Baird)
72. *Sitta canadensis* Linnæus
73. *Penthestes atricapillus septentrionalis* (Harris)
74. *Penthestes rufescens rufescens* (J. K. Townsend)
75. *Regulus satrapa olivaceus* Baird
76. *Corthylio calendula cineraceus* (Grinnell)
77. *Hylocichla ustulata swainsoni* (Tschudi)
78. *Planesticus migratorius propinquus* (Ridgway)
79. *Ixoreus nævius meruloides* (Swainson)
80. *Sialia mexicana occidentalis* J. K. Townsend
81. *Sialia currucoides* (Bechstein)

General Accounts of the Birds

1. **Mergus americanus** Cassin

One noted near Creston May 3, but none identified later.

2. **Anas platyrhynchos** Linnæus

Noted near Creston May 3, but none seen after the rivers rose.

3. **Querquedula cyanoptera** (Vieillot)

A male was noted May 2, on the Kootenay near Creston, and one was taken May 31.

4. **Aix sponsa** (Linnæus)

A male was seen May 2, in the Kootenay bottom, but not secured. No other noted.

5. **Botaurus lentiginosus** (Montagu)

Near the first camp of the party this species was daily heard in the bottom land making its "pumping" sound, but it was soon driven away by the flood waters. One secured June 1, near Creston.

6. **Gallinago delicata** (Ord)

Like the last, commonly heard at night until driven away from the bottom land by high water. One secured May 31, along the edge of the overflow.

7. **Oxyechus vociferus** (Linnæus)

A few pair were scattered along the edge of the bottom land and several specimens were taken.

8. **Dendragapus obscurus richardsoni** (Douglas)

Reported to have been quite common all through the coniferous forest in the vicinity of Creston and on both the Purcell and the Nelson mountain ranges, but in 1928 grouse were very scarce. Some of the resident people ascribed this to an epidemic and others to the fact that the preceding spring had been a very wet one, with consequent high mortality among young broods. A few were found in close vicinity to Creston, on Goat Mountain, and Tose found a few on the higher ranges while out on side trips. Four specimens were secured, all typical *richardsoni.*

9. **Bonasa umbellus umbelloides** (Douglas)

This grouse was found in practically the same localities as the above, but seemed to prefer more brushy ground cover. It was apparently even more scarce than *Dendragapus,* though it may have been only more difficult to find. Three specimens were secured, one of which was taken in the cottonwoods on the bottom land.

10. **Accipiter velox** (Wilson)

Not often met with. Near Kitchener, a male was taken May 23, a few miles east of and at a higher elevation than Creston.

11. **Accipiter cooperi** (Bonaparte)

This hawk also was rare, but less so than the preceding. One specimen only was secured, a very small adult male, May 9.

12. **Cerchneis sparveria sparveria** (Linnæus)

A few pairs were noted in this region, but this species was by no means common. A male and a female were taken at Creston May 5.

13. **Pandion haliaëtus carolinensis** (Gmelin)

Occasionally noted along the river. One specimen secured May 5. None was observed in the act of securing food, so that what it succeeded in finding in the way of sustenance during this flood of muddy, opaque water was not ascertained.

14. **Bubo virginianus** subsp.

At the first camp, owls of this genus were nightly heard hooting, chiefly in the cottonwood groves of the bottom land, with only a few calls from the wrecked forest close by.

15. **Ceryle alcyon caurina** Grinnell

Present, but rarely met with in such a great area as was covered by the abnormally high water of 1928. One specimen was secured May 7.

16. **Dryobates villosus monticola** Anthony

Commonly found in suitable places throughout the region, but not numerous in any part of it. Several specimens secured.

17. **Dryobates pubescens leucurus** (Hartlaub)

Common, but not as abundant as might be expected, even in localities appearing to be very well adapted to its needs. Found scattered about apple orchards and, to some extent, in the coniferous forest where not too dense, but most numerous in the cottonwoods of the bottom land, at least before high water. As this species is not a ground feeder, it hardly seems probable that flood conditions would seriously affect its status there.

18. **Picoides articus** (Swainson)

Three specimens of this woodpecker were collected, two at Kitchener and one at Creston. The latter was taken May 8, when it probably was on its way to a higher altitude, as no more were noted at Creston level.

19. **Picoides americanus fasciatus** Baird

A female was taken near Kitchener May 24, at an altitude of 3000 feet, or over. None other was identified.

20. **Sphyrapicus varius nuchalis** Baird

A very common bird in the Kootenay Valley and more numerous than all other species combined of the woodpeckers noted there.

21. **Phloeotomus pileatus picinus** Bangs

In the woods near Creston this woodpecker is still rather commonly to be heard in the spring time, but it is very wild and not easily seen in the tall timber. Reported by residents of Creston as quite numerous in winter, coming down from higher altitudes to where food conditions were less trying. Often heard by members of our party and seen at a distance. One specimen was secured.

22. **Asyndesmus lewisi** Riley

A few pairs of this conspicuous woodpecker were noted in the Kootenay Valley, scattered over the region, and several specimens were taken.

23. **Colaptes cafer collaris** Vigors

This woodpecker is commonly found throughout the territory around Creston, but is less abundant than one might expect, considering the favorable appearance of the country. Three specimens were secured which appear to be referable to this form.

24. **Archilochus alexandri** (Bourcier & Mulsant)

Very few hummingbirds of any species were seen and most of those noted were in the gardens and orchards in and around Creston, where a female was taken May 28. No other individual of this species was identified.

25. **Selasphorus rufus** (Gmelin)

What few hummingbirds were seen outside of gardens or apple orchards were usually in places where it would have been impossible to retrieve one if shot, on account of weeds and trash on the ground, and none of this species was secured. Several times noted in the town of Creston. A nest was found in an apple tree on the outskirts of town, nearly seven feet above ground, with the female incubating. This bird was so little disturbed by close approach of an observer that her tail feathers were critically examined by the author for some minutes, at a distance of only a few inches. The bird was finally flushed and shot, but attempts to secure it failed, as it fell slantingly into a hopeless tangle of weeds.

26. **Stellula calliope** (Gould)

A male was taken May 14, at Creston, and another May 22, these constituting the only records.

27. **Tyrannus tyrannus** (Linnæus)

This flycatcher was first noted May 12 by the Tose party at West Creston across the Kootenay River, when one specimen was taken. None was seen on the east side of the river until May 29, when a few were noted here and there in favorable localities in the open, rolling country. A few days later a boat trip made by some of the party revealed quite a number of these flycatchers among scattered, bush-like willows, half a mile or more out from the flood shore. The tops of these willows extended 5 to 10 feet above the water, and, at this date, buds were just beginning to show on the exposed twigs. Among these still bare looking branches the Kingbirds were building nests, mostly with dead twigs from the immediate surroundings. Some of the nests seemed to be perilously near the water. Of two discovered on June 1, one was only about a foot above water and the other 18 inches. (See Condor XXXIII, 1931, pp. 73–74.)

28. **Tyrannus verticalis** Say

Noted at West Creston May 10, when two specimens were secured. Farmers of that locality reported that there had been a flight of birds of this species through West Creston just previous to our arrival. This flycatcher was not noted anywhere after May 10.

29. **Myiochanes richardsoni richardsoni** (Swainson)

Rare in this locality. A few were noted at Creston and two specimens were secured, May 28 and 29, respectively.

30. **Empidonax hammondi** (Xantus)

A specimen was taken at Creston May 17, the earliest date on which this species was noted. Later it was found to be common in this vicinity, in suitable association, and was also found between Kitchener and Yahk.

31. **Empidonax wrighti** Baird

The only flycatcher identified as of this species was taken at Creston May 19.

32. **Cyanocitta stelleri annectens** (Baird)

Common resident, mostly in coniferous association. Not numerous in the breeding season, as it scatters out through the higher mountains for nesting. Early in May a few were seen in the cottonwoods of the river bottom, probably in vertical migration. Said to be more numerous in winter.

33. **Perisoreus canadensis capitalis** Ridgway

On May 8, one adult male, two adult females, and four juveniles, were taken in the pine forest on Goat Mountain, close to Creston. These were part of a small band that appeared to be migrating through the locality. Another female was secured May 15, but none was seen after that date.

34. **Corvus brachyrhynchos hesperis** Ridgway

A few crows were apparently resident in this vicinity, but they were so wary that but one was secured. Several pairs were noted in the overflowed cottonwood groves along what are the banks of the Kootenay River at normal stage of water. Here they were nesting in the taller trees, from which they sallied forth in search of food for the young, paying particular attention to drift and to the flood shores.

35. **Nucifraga columbiana** (Wilson)

On May 16, a female of this species was taken on the edge of the wrecked forest, across Goat River from Creston, this constituting the only record.

36. **Dolichonyx oryzivorus** (Linnæus)

Several Bobolinks were seen from the road at the foot of the Creston grade May 28, on a small patch of ground around a farm house that was isolated by high water. A landing was made upon this little island, but the birds were very wary and flew away before any could be secured. Identification, however, as made by the present writer, was unquestionable.

37. **Molothrus ater artemesiæ** Grinnell

The only bird noted of this species, a female, was taken at Creston on June 1, in the top of one of the bush-like willow trees out in the overflowed bottom, where it was in company with some red-winged blackbirds.

38. **Agelaius phœniceus nevadensis** Grinnell

At the date of our arrival, a few red-winged blackbirds were occupying some reeds in the bottom land, a mile or so above Creston. Judging from old nests found, it seemed that they would nest in the willows there, but the rapidly rising flood waters and want of a boat made critical examination of

the situation impossible. Later, when the flood was at its peak, a boat was finally obtained at Creston and redwings were found close to town, in the protruding tops of willows in the submerged area, where nine adult males in good plumage, and one in poorly developed plumage, were taken. Females were scarce and only two were secured. No nests were found.

A careful examination of these specimens shows that the exposed culmen of the nine males averages slightly longer than does that of a series of *Agelaius p. nevadensis* from eastern and north-eastern California, but in every other particular the Kootenay Valley birds correspond so closely with the above from California that there seems to be every reason to consider them as being the extreme eastern representation of *A. p. nevadensis*. In this the British Columbian members may be classed with the redwings of southeastern Arizona (see Swarth, Proc. Calif. Acad. Sci., 4th Series, XVII, no. 12, pp. 317-322), as being the largest representatives of this race, just as the California birds are the smallest.

39. **Sturnella neglecta** Audubon

Common over the open country and on cleared land, but not numerous. There were some in the river bottom in early May, but they were soon driven out by the high water.

40. **Icterus bullocki** (Swainson)

Prior to the end of May this species was not encountered in this region, but a male and a female were taken at Creston June 1. Unless there were further arrivals after our departure on June 6, orioles are poorly represented among the summer birds of this valley, as no other individuals were seen.

41. **Euphagus cyanocephalus cyanocephalus** (Wagler)

Common resident of the Kootenay Valley, but not abundant in spring. Found nesting around Creston.

42. **Hesperiphona vespertina brooksi** Grinnell

A flock of birds of this species appeared near Creston May 14, from which several specimens were secured, mostly males. Others were seen May 19, in the forest on Goat Mountain, but none after that date.

43. **Carpodacus cassini** Baird

Common summer resident in the coniferous forest and relatively numerous.

44. **Spinus pinus pinus** (Wilson)

A male was taken at Creston May 19, and a female the next day, but no further record of this species was made.

45. **Passerculus sandwichensis anthinus** Bonaparte

A pair was taken at Creston May 2, but none was seen after that date. The two collected, migrants, are apparently of the coastal subspecies *anthinus* (see Brooks & Swarth, Birds of British Columbia, Pac. Coast Avifauna, No. 17, p. 91).

46. **Zonotrichia leucophrys gambelli** (Nuttall)

A single individual was seen at Creston May 7, followed in the next few days by a small migratory wave, from which several specimens were taken, after which no more were noted.

47. **Spizella passerina arizonæ** Coues

Common summer resident in the region covered by us.

48. **Junco oreganus shufeldti** (Coale)

Commonly found all through the coniferous association in the localities visited. Nests were found and young noted, May 8 being the date of finding the first nest, which contained five eggs.

49. **Melospiza melodia morphna** Oberholser

Common summer resident of the Kootenay Valley, but not abundant. Found mostly near water. Presumably resident throughout the year, as it is so recorded in similar territory in other parts of southern British Columbia.

50. **Passerella iliaca** subsp.

One heard but not seen, near Creston, May 9, and another shot May 16. The latter fell into a great pile of slash and dead brush, where it could not be found. None other seen.

51. **Pipilo maculatus curtatus** Grinnell

Common along the lower levels about Creston, nesting in congenial association, but not abundant.

52. **Hedymeles melanocephalus melanocephalus** (Swainson)

A male was taken at Creston May 26, the only one seen.

53. **Passerina amœna** (Say)

First noted May 19, when a male was taken. Another male was secured May 30, but this bird was rarely met with.

54. **Piranga ludoviciana** (Wilson)

The note of this species was heard by the writer May 12 and a male was taken May 15, after which date it was relatively common in the forest land of the vicinity.

55. **Petrochelidon albifrons albifrons** (Rafinesque)

A few pairs were nesting in Creston, at which place they arrived rather late in May.

56. **Hirundo erythrogaster** Boddaert

First recorded May 10, near Creston, where a pair was noted among some *Stelgidopteryx* in a deep cut in a road. Soon after this date several pairs were noted nesting in the town.

57. **Iridoprocne bicolor** (Vieillot)

This species was already present in Creston on May 1, and was commonly noted thereafter in all suitable places. Later on many were nesting in old woodpecker holes in the dead trees that were scattered over the overflowed bottom land.

58. **Tachycineta thalassina lepida** Mearns

This species also was present in Creston May 1, and was commonly nesting, in the height of the flood, in the dead trees and stumps of the river bottom in company with the preceding species. A number of pairs of the Northern Violet-green Swallow were found in possession of a lumber yard in town and were nesting inside large, square piles of board lumber that was loosely cross-laid so as to leave space for circulation of air for drying purposes. On May 22 these swallows were seen industriously carrying nesting material in to the depths of the lumber piles, around which the birds could be seen at any time thereafter.

59. **Stelgidopteryx serripennis** (Audubon)

First noted on May 6, near the first camp of the party, where a number were flying up and down a cut in the road, every few minutes perching on bare twigs or examining holes in the banks of the cut. Several specimens were taken.

60. **Bombycilla cedrorum** Vieillot

On June 1, when the writer was out in a boat on the overflowed river bottom, a band of Cedar Waxwings flew into a cottonwood tree within range and two birds were secured, both females. No others were noted.

61. **Vireosylva olivacea** (Linnæus)

Noted first May 24, in a small grove of cottonwood trees on the banks of a tiny stream in the outskirts of Creston. On this date the characteristic song was heard and an occasional glimpse was had of one of the birds among the thick foliage of the tree tops. This lively little songster soon became common in suitable places of the region, but was always difficult to detect among the green leaves. Several specimens were secured.

62. **Vireosylva gilva swainsoni** (Baird)

The first record of this species was made May 25, when a single specimen was taken. It became more common thereafter but was nowhere abundant in this region.

63. **Lanivireo solitarius cassini** (Xantus)

Present around Creston in the coniferous timber land, but not at all numerous. First noted May 3, and one specimen taken May 17.

64. **Vermivora ruficapilla gutturalis** (Ridgway)

First noted May 5, when one specimen was taken. It soon became quite common in suitable association on both sides of the Kootenay River and several others were secured.

65. **Dendroica æstiva æstiva** (Gmelin)

First identified May 4, and the first specimen taken May 9, after which date it became quite common in the vicinity.

66. **Dendroica auduboni auduboni** (J. K. Townsend)

Taken at Creston May 6 and at West Creston May 11. By the end of the month this species had become quite common.

67. **Geothlypis trichas occidentalis** Brewster

The inundation of the lowlands robbed this species of its natural habitat in the region and but one specimen was secured. This was taken near Creston, in some sedge on the shore of the overflow waters.

68. **Setophaga ruticilla** (Linnæus)

On May 28 this bird was discovered in the cottonwood grove near our second camp, at the northern edge of Creston, and within the next few days several others were taken. Not seen anywhere else.

69. **Dumetella carolinensis** (Linnæus)

The Catbird did not appear until near the end of May, after which time its singing was constantly heard in Creston gardens and along the edge of the overflow, wherever there was brushy cover in which it might nest and into which it could dive when alarmed.

70. **Troglodytes aëdon parkmani** Audubon

First noted May 8, when a male bird was secured. Another was taken May 19, but it soon became evident that this species was scarce in the vicinity, as none other was noted.

71. **Mannus hiemalis pacificus** (Baird)

Taken at Creston May 11, at West Creston May 12, and later at Kitchener, but it was nowhere found to be abundant.

72. **Sitta canadensis** Linnæus

This species was heard in the coniferous forest May 1, and one bird was secured May 17. A common summer resident.

73. **Penthestes atricapillus septentrionalis** (Harris)

Very common everywhere in the forest region and some were noted among the cottonwoods in the bottom land. Probably a permanent resident, as it is so recorded from territory further north.

74. **Penthestes rufescens rufescens** (J. K. Townsend)

Noted only once, when one was taken May 11, near West Creston, at the base of the Nelson Range of mountains.

75. **Regulus satrapa olivaceus** Baird

Both this species and the next were very difficult to identify in the upper parts of the tall timber that they frequented, and very little information was obtained concerning either of them, of this species in particular. It was, however, evidently nesting near the top of Goat Mountain, at an elevation of several hundred feet above that of Creston, and a female was there obtained June 3. Except for shortness of wing and tail this bird could easily be mistaken for the eastern form.

76. **Corthylio calendula cineraceus** (Grinnell)

This kinglet was more commonly noted than the preceding species, as it is more apt to be found nearer the ground. A male was taken at Creston May 3, a female the next day, and another male was secured high up on Goat Mountain June 3. While these specimens are not typical *cineraceus* they are decidedly nearer to that form than to *C. calendula calendula.*

77. **Hylocichla ustulata swainsoni** (Tschudi)

Thrushes were scarce and their characteristic musical song was seldom heard. A male was taken near Kitchener May 20, and another at Creston May 31. No others were seen, in spite of the presence of what appeared to be very good cover for this species.

78. **Planesticus migratorius propinquus** (Ridgway)

Very common and nesting in every locality that was visited by us.

79. **Ixoreus nævius meruloides** (Swainson)

On May 11 several specimens were taken at West Creston and this species was noted later at Creston. In the latter locality a family party, consisting of parents and three or four fledglings, was encountered May 27 in second growth forest. When discovered, the juveniles, much desired for specimens, were too close to shoot at without damage to plumage and all managed to fade from sight in the dark, dripping woods on this rainy day while the writer was trying to back away far enough to secure one or two in good shape. All efforts to find them again were unsuccessful.

80. **Sialia mexicana occidentalis** J. K. Townsend

This bird was present at the date of our arrival, April 30, and nesting was soon begun as the weather warmed up. Common, but not abundant.

81. **Sialia currucoides** (Bechstein)

Also present on April 30, and noted nesting at every locality visited by us. A juvenile male was taken May 31, at Creston.

CHECK-LIST OF THE MAMMALS

1. *Sorex vagrans monticola* (Merriam)
2. *Marmota monax petrensis* Howell
3. *Citellus columbianus columbianus* (Ord)
4. *Eutamias ruficaudus simulans* Howell
5. *Sciurus hudsonicus richardsoni* (Bachman)
6. *Peromyscus maniculatus artemisiæ* (Rhoads)
7. *Neotoma cinerea drummondi* (Richardson)
8. *Evotomys gapperi saturatus* Rhoads
9. *Microtus mordax mordax* (Merriam)
10. *Lepus bairdi* (*cascadensis* Nelson ?)

GENERAL ACCOUNTS OF THE MAMMALS

1. Sorex vagrans monticola (Merriam)

This shrew was found in traps at Creston on four occasions, but not taken elsewhere. For positive identification of the subspecies the author is gratefully indebted to Dr. H. H. T. Jackson, of the United States Biological Survey.

2. Marmota monax petrensis Howell

On June 1, near Creston, Tose found and preserved a freshly killed marmot of this species, that some one had thrown into a hollow stump on the edge of the flooded bottom land. It was an adult female that showed evidence of having, or recently having had, unweaned young. Resident farmers stated that the presence of a marmot in that locality was an extremely rare occurrence. Possibly it floated on driftwood down the flooded Goat River from the Purcell Mountains.

3. Citellus columbianus columbianus (Ord)

In some localities around Creston this ground squirrel was noted in small but rather thickly populated colonies. It was extremely wary and yet easier to shoot than to trap. After two of three individuals were caught in a colony, traps were of little further use, as the squirrels then refused to come out of a burrow in the mouth of which a trap had been set, no matter how carefully camouflaged. There was every reason to suppose that the burrows communicated with other openings, as squirrels would appear above ground, in about every part of

a colony, at the mouths of burrows that did not have traps in them, but would carefully avoid those that did have them. The report of a gun did not seem to disturb a colony for any great length of time, yet on occasions, without any apparent reason for it, an alarm signal from some squirrel would keep a whole colony under ground for the rest of the day. Three females taken May 13 contained 3, 5 and 5 embryos, respectively, those of the first female being 34 mm. in length and of the other two 37 mm.

4. **Eutamias ruficaudus simulans** Howell

Cold weather seemed to have kept the chipmunks under cover for the first few days after our arrival at Creston, so that none was taken until May 5, after which date they were commonly seen in the forested lands. By the end of May young also were out foraging.

5. **Sciurus hudsonicus richardsoni** (Bachman)

This is the common red squirrel of the Kootenay Valley and was fairly abundant in the coniferous forest.

6. **Peromyscus maniculatus artemisiæ** (Rhoads)

This mouse was found to be common in every place where trapping was carried on, but it was not actually numerous anywhere, as shown by the small number the party obtained per trap-night. There was good reason to believe that its numbers had been much reduced by some epidemic.

7. **Neotoma cinerea drummondi** (Richardson)

Taken around Kitchener and Yahk, where it was very common. While the party did not come across this wood rat at Creston, residents reported that it occasionally was found in that vicinity, in limited numbers.

8. **Evotomys gapperi saturatus** Rhoads

A male was secured by Tose near Kitchener, May 21. No further record of this species was made.

9. **Microtus mordax mordax** (Merriam)

Farmers around Creston stated that meadow mice had been so numerous in the hay fields of the bottom land for the previous year or two as to be actual pests, but that in 1928 their numbers had diminished almost to the vanishing point. Some old sign of this species was found in favorable places in the meadow land, but the high water soon covered all traces of such habitation. Finally a little fresh sign was found under a collapsed shed on the mesa, some distance above the river bottom, and two adult females, with two immature males, were there taken. These, with several adults from around Kitchener and Yahk, where there was more evidence of occupation than at lower levels, comprised the entire catch of the party.

10. **Lepus bairdi (cascadensis** Nelson ?)

The varying hare was reported to be numerous, ordinarily, in the Kootenay Valley, but, as with the two species of mice above mentioned, it had been almost annihilated by a recent epidemic. Only on rare occasions was an individual seen, and it was not until May 25 that one—the only one—was secured. This was a female with the summer pelage not yet quite complete. It seems to be intermediate between *L. b. bairdii* and *L. b. cascadensis,* but rather nearer to the latter race. To Dr. E. Raymond Hall, of the Museum of Vertebrate Zoology, Berkeley, California, the author desires to acknowledge his indebtedness for valuable assistance in comparing and identifying this specimen.